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acute tubercle; the punctures of the thorax are fine, and there is a smooth space each side of the middle. The elytra are finely rugous, sparsely punctured, and vary in color, from black to fuscous; there is a pale band at the middle, sometimes reduced to a sutural spot; the apical margin is also pale. The pectus and sides of the abdomen are tolerably coarsely punctured. The antennæ are fuscous, sometimes paler; the feet are dark testaceous. The wings of the male are transparent; in the female there is a subapical fuscous cloud as usual.

In none of my specimens are the antennæ bright yellow, as described by Say, and I therefore suppose his description to refer to a species unknown to me.

7. *M. americanus* Guérin, Dict. Class. d'Hist. Nat. xi. 369. Icon. Régne An. tab. 34, fig. 5.

Unknown to me; seems by the figure to be an entirely black species, about the size of *M. fasciatus*.

Notes on the Species of *HARPALUS* inhabiting America, north of Mexico.

BY JOHN L. LE CONTE, M. D.

My attention has been recently drawn to the essay on classification of the Harpalini of Denmark, by Schiödte,* and I have attempted by aid of the ideas therein developed to group our species in a natural manner. In doing this, I have noticed peculiarities in some of them, which seem to show that the characters used in the essay quoted do not possess the value that has been attributed to them by the author.

Thus, for example, in the first division (genuine Harpalini,) *Bradycellus* is separated from all the other genera by the last joint of the palpi being attenuate, and the body smooth; in the other genera the last joint of the palpi is fusiform, and the body reticulate.

I find that this is correct, as far as relates to the genera allied to *Anisodactylus*; but fails in the others; in *Stenomorphus* and *Gynandropus* the surface is not reticulate, while in *Gynandrotarsus* it is quite distinctly so. In most species of the group (or perhaps genus) *Selenophorus* the surface is reticulate, but in the iridescent species (*opalinus* Lec., *gagatinus* Dej., and *iripennis* Say,) no trace of reticulation can be seen; in *S. fatuus* Lec. it can scarcely be observed.

Similar exceptions may be found among the typical *Harpalus*: thus in *H. amputatus* Say, the female is very finely reticulate, and the male is polished; the reticulation is scarcely perceptible in the male of *H. fallax* Lec., *megacephalus* Lec., while in both sexes of *H. spadiceus* Dej., *testaceus* Lec. and *nitidulus* Chaud., the surface is polished.

So in the *Stenolophini*, in which the body is declared to be smooth, a similar exception is seen in the finely reticulate *S. carbonarius*.

The fundamental division of the species of *Harpalus* into two groups, (I. *Setæ ambulatoriæ abdominales pilis nullis intermixtæ: setæ ambulatoriæ femorales parciore et graciliores, foveolis setigeris minutis*, and II. *Setæ ambulatoriæ abdominales pilis longioribus inæqualibus intermixtæ: setæ ambulatoriæ femorales copiosæ validiores, foveolis setigeris plerumque profundius impressis*.) seems to me also defective when applied to our species. I find that the ambulatorial setæ of the anterior thighs are more numerous and stronger in the males than in the females, and that the use of this character will be likely to lead to error. In some species I observe some long bristles about midway between the ambulatorial setæ and the side of the abdomen, which may serve to group the species in a secondary manner. I have termed them accessory setæ.

* Krøyer, Tids. 3d ser. vol. i.

The paraglossæ of the genuine *Harpalus* are rather thick, not longer than the ligula, and are furnished on the sides with a few bristles; the ligula is broader at the tip and truncate, with the side angles acute. In *Selenophorus* the paraglossæ are flat, longer than the ligula, without lateral bristles; and the ligula is narrow, not dilated at the tip. I am therefore inclined to believe that *Selenophorus* should be considered a genus, and not a group of *Harpalus*, as I have recently placed it.

The species of *Harpalus* in my collection may be grouped as follows: (the measurements are in decimals of the English inch.)

- A. Elytra very deeply sinuate at tip; outer angle acute and dentiform in the female; third interval without dorsal puncture; abdomen finely punctured and pubescent towards the base. Body elongate.
- 56—·76. Thorax narrowed behind, side margin depressed, base scarcely punctured; color dark ferruginous, elytra piceous, deeply striate. Sandy places; Middle States, Kansas.....1. *erraticus* Say.
- 56—·66. Thorax narrowed behind, margin not depressed, base punctulate, hind angles not rounded at tip; color nigro-piceous, antennæ and legs ferruginous. New Mexico.....2. *retractus* Lec.
- B. Elytra truncate, or deeply sinuate at tip; anterior tibiæ with the outer angle prolonged behind, forming a small tooth; abdomen sparsely punctured and pubescent.
- a. Elytra truncate; armed with a sutural spine in the female; dorsal puncture distinct.
- 38—·40. Thorax narrowed behind, angles rounded, basal foveæ small, punctured; color beneath dark piceous or black, above metallic blue or green, rarely black. Kansas, New Mexico, Saskatchewan, Montreal, Canada.
3. *amputatus* Say.
- b. Elytra transversely sinuate, outer angle acute in female: dorsal puncture wanting; sides of elytra finely punctured and pubescent.
- 38—·40. Thorax narrowed behind, hind angles not rounded; basal foveæ small, finely punctured; color beneath dark piceous or black; legs ferruginous or black; above metallic green or coppery, rarely black. Middle States, Canada, Newfoundland.....4. *viridiaeneus* Beauv.
- C. Elytra obliquely, but slightly sinuate at tip; abdomen without accessory setæ, finely punctured and pubescent towards the base.
- a. Mentum tooth completely wanting; elytra without dorsal puncture; feet black.
- 80—·94. Thorax narrowed anteriorly, side margins broadly depressed, and basal foveæ densely punctulate. Middle, Southern and Western States, Canada, Kansas.....5. *caliginosus* Say.
- b. Mentum tooth more or less distinct; elytra without dorsal puncture; antennæ and feet ferruginous.
- * Side margin of thorax depressed, scarcely wider behind; sides and base punctured.
- † Thorax nearly square; elytra not punctulate.
- 50. Hind angles slightly rounded; sides feebly rounded. Middle States.
6. *faunus* Say.
- 42—·48. Hind angles scarcely rounded; sides more rounded in front. New York.....7. *convivus* n. sp.
- †† Thorax slightly narrowed behind; hind angles not rounded.
- 54—·58. Elytra punctulate, at least at the sides. Illinois.
8. *vagans* n. sp.

** Thorax with base and side margin densely punctulate.

·50—·62. Thorax narrowed in front; sides strongly depressed; elytra sparsely punctulate at the sides. Atlantic States, Kansas.

9. *pennsylvanicus*.

Thorax slightly narrowed behind; sides feebly depressed;

·54—·66. Hind angles less obtuse; elytra not punctulate at the sides. Atlantic States, Kansas.....10. *comparsa* *Lec.*

·54—·64. Hind angles more obtuse; elytra finely punctured at the sides. Pennsylvania, New York.....11. *longicollis* *Lec.*

·42—·48. Smaller, hind angles of thorax less obtuse; elytra not punctulate at the sides. Atlantic States.....12. *erythropus* *Dej.*

*** Thorax scarcely punctured at base; sides not distinctly depressed.

·34. Head very large; hind angles of thorax rounded; basal foveæ slightly punctured; elytra slightly bronzed. Lake Superior.

13. *megacephalus* *Lec.*

c. Mentum tooth more or less distinct; elytra with dorsal puncture.

* Antennæ and feet ferruginous; bead of prothorax yellowish.

† Thorax distinctly narrowed behind; sides not depressed.

·38. Base of thorax not punctured; elytra not reticulate. Middle States.

14. *spadiceus* *Dej.*

†† Thorax not narrowed behind; body oblong oval.

·38. Elytra feebly bronzed; base of thorax punctured. Russian America, Saskatchewan.....15. *fulvilabris* *Mann.*

Elytra not bronzed;

‡ Sides of thorax narrowly but distinctly depressed; (basal foveæ vaguely defined.)

·34—·42. Hind angles slightly rounded; base finely punctured. Atlantic States, New Mexico.....16. *fallax* *Lec.*

·30—·42. Hind angles not rounded; base punctured; (epipleuræ always ferruginous. Canada, Minnesota, Winnipeg.....17. *pleuriticus* *Kirby.*

·30—·42. Hind angles rounded; base scarcely punctured; epipleuræ generally dark. Atlantic States, Canada, Kansas.....18. *herbivagus* *Say.*

·32—·36. Hind angles scarcely rounded; basal foveæ sparsely punctulate; knees blackish; Russian America, Oregon.....19. *somnolentus* *Dej.*

‡‡ Sides of thorax scarcely depressed; base not punctured.

·38. Hind angles rectangular; not rounded. Kansas.

20. *ventralis* *Lec.*

††† Thorax narrowed in front; body nearly elliptical.

·34. Sides of thorax feebly depressed; elytra reticulate. Pennsylvania, Kansas, Ft. Simpson.....21. *opacipennis* *Hald.*

·26—·30. Sides of thorax not depressed; elytra not reticulate. Southern and Western States, Kansas.....22. *nitidulus* *Chaud.*

** Feet piceous or black; or at least thighs dark; bead of prothorax not paler.

Thorax narrowed in front; intercoxal process of abdomen nearly smooth.

·30. Body elliptical; sides of thorax not depressed; elytra of male not reticulate. Kansas, Louisiana.....23. *ellipsis* *Lec.*

·30—·44. Body longer oval; sides of thorax feebly depressed. California, Oregon.....24. *cautus* *Dej.*

Thorax not narrowed in front; intercoxal process of abdomen punctulate;

† Head decidedly narrower than the thorax.

Thorax not very transverse; base punctured;

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·37. Hind angles of thorax slightly obtuse, not rounded; (tibiæ and tarsi ferruginous.) Lake Superior..... 25. *innocuus* Lec.

Thorax strongly transverse;

Hind angles of thorax obtuse; scarcely rounded at tip; base punctured;

·40. Sides of thorax less strongly rounded; (elytra of female without sutural spine.) Saskatchewan..... 26. *carbonatus* Lec.

·39—46. Sides of thorax more strongly rounded; (elytra of female with distinct sutural spine.) Lake Superior..... 27. *rufimanus* Lec.

·56. Hind angles of thorax obtuse, rounded at tip; base scarcely punctured. Colorado Terr..... 28. *montanus* n. sp.

·52—58. Hind angles of thorax flattened, rectangular not rounded; base sparsely punctulate. Lake Superior..... 29. *Lewisii* n. sp.

†† Head very large, scarcely narrower than the thorax.

·48—60. Sides of thorax distinctly depressed. Lake Superior.

30. *laticeps* Lec.

·56. Sides of thorax not depressed. Illinois .. 31. *viduus* n. sp.

D. Elytra very slightly sinuate at tip, (except in 39,) abdomen with accessory ambulatorial setæ, proceeding from distinct punctures.

a. Mentum tooth more or less distinct.

* Elytra with dorsal puncture; antennæ concolorous, reddish brown.

† Mentum tooth very small; (larger species of dark color, with the elytra reticulate in both sexes.)

Base of thorax smooth, or scarcely punctulate; sides slightly depressed.

·58—64. Body oblong oval; elytra of female with sutural spine. Oregon. 32. *fraternus* Lec.

·46. Body oblong oval; sutural spine of female obsolete. Kansas.

33. *funestus* Lec.

·48—54. Body broader; thorax slightly narrowed behind; elytra of female with sutural spine. New Mexico and Colorado..... 34. *oblitus* Lec.

Sides of thorax not depressed; feet ferruginous.

·40. Hind angles obtuse, slightly rounded; base nearly smooth. Colorado. 35. *furtivus* n. sp.

·45. Hind angles subrectangular, slightly rounded at tip; base of thorax punctulate. Nebraska..... 36. *stupidus* Lec.

†† Mentum tooth large, prominent; smaller species of brown color, paler beneath; elytra of male smooth; of female scarcely reticulate.

·30. Sides of thorax not depressed. New Mexico, Kansas.

37. *desertus* Lec.

·30. Sides of thorax depressed, base punctured. Kansas.

38. *lucidus* n. sp.

** Elytra with dorsal puncture, tip much more distinctly sinuate; antennæ paler at base.

·36. Body broad, hind angles of thorax scarcely rounded; sides slightly depressed. Oregon, Idaho, Winnepeg..... 39. *obesus* Lec.

*** Elytra without dorsal puncture; antennæ paler at base.

·35. Thorax not narrowed behind, sides not depressed. Lake Superior, Canada..... 40. *varicornis* Lec.

b. Mentum tooth entirely wanting; elytra not reticulated; hind angles of thorax rectangular.

* Elytra without dorsal puncture.

·42. Body uniformly testaceous, oblong oval. Iowa, Illinois.

41. *testaceus* Lec.

** Elytra with dorsal puncture.

35. Body broad, piceous; thorax and elytra green bronzed. Texas.

42. *gravis* Lec.

The following species are unknown to me :

- H. longior* Kirby, Fauna Bor. Am. 4, 43. Found in Lat. 54°. Perhaps *H. vagans* Lec.
H. basilaris Kirby, ibid. 41. Found in Lat. 54°. Seems allied to *H. obesus* Lec., but the trochanters in the latter are not dark yellow, nor are the elytra chestnut black.
H. ochropus Kirby, ibid. 42, is perhaps *H. desertus* Lec.
H. albionicus Mann., Bull. Mosc. 1843, 213, agrees with immature specimens of *H. cautus* Dej., in my collection. Not having seen a typical specimen, I do not venture to propose the synonym.
H. curtatus Mann., ibid. 1853, 124. Russian America.
H. dulcicollis Ferté, Rev. Zool. 1841, 44. Texas. Probably an immature form of *Anisodactylus ellipticus* Lec.
H. depressicollis Motsch., Bull. Mosc. 1860, 2, 136. California.
H. alternans Motsch., ibid. 1845, 2, 343. California.

Descriptions of new Species.

7. *H. convivus*. Elongato-oblongus, nigro-piceus, antennis palpis pedibusque ferrugineis; thorace latitudine brevior, lateribus anguste fortiter depressis punctatis, antice magis rotundatis, margine summo, ferrugineo angulis posticis fere rectis, foveis basalibus rotundatis, profundis punctatis; elytris reticulatis profunde striatis, puncto dorsali nullo; subtus piceus, abdomine rufescente, inter et post coxas parce punctulato. Long. .42—.48.

One pair from New York. Related to *H. faunus*, but the thorax is more rounded on the sides in front, distinctly transverse, very slightly narrowed behind with the basal foveæ deeper.

8. *H. vagans*. Elongato-oblongus, subtus rufo piceus, supra nigro-piceus, antennis, palpis pedibusque ferrugineis; thorace latitudine paulo brevior, postice paulo angustato, lateribus anguste depressis punctatis, antice magis rotundatis, margine summo ferrugineo, angulis posticis obtusis haud rotundatis, basi dense punctato, foveis profundis vage definitis; elytris reticulatis profunde striatis, puncto dorsali nullo, interstitiis feminae omnibus, maris externis confertim punctulatis. Long. .54—.58.

One pair. Western States. Quite distinct by the characters given above. Seems related to, and perhaps identical with *H. longior* Kirby.

11. *H. longicollis* Lec., Ann. Lyc. Nat. Hist. 4, 396.

I indicated this species on a single male specimen found at New York, and subsequently considered it as probably an aberrant form of *H. compar*, but Mr. Ulke has recently found it abundantly in the mountains of Pennsylvania. The characters in the table as well as those formerly given by me, will enable it to be recognized, and it is, moreover, much narrower in form than *H. compar*.

12. *H. erythropus* Dej. This species seems to differ from *H. compar* only by the smaller size, and by the hind angles of the thorax being a little less obtuse. I have some doubt about the validity of these characters as specific differences.

25. *H. montanus*. Oblongo-ovalis niger, antennis palpisque piceo-rufis, thorace capite latiore, latitudine sesqui brevior, lateribus rotundatis, parum depressis, obsolete parce punctulatis basi fere lævi, foveis parvis, angulis posticis obtusis apice rotundatis; elytris subtiliter reticulatis, feminae opaciusculis, striatis, interstitiis planis, 3io puncto postico impresso; abdomine pone coxas subtiliter, inter coxas vix punctulato. Long. .56.

[June,

Colorado Territory. One pair given me by Dr. S. Lewis. The suture of the female is armed with a small spine. Resembles in appearance *H. fraternus Lec.*, but besides minor differences it is readily distinguished by the absence of setigerous punctures between the ambulatorial setæ of the abdomen and the sides.

26. *H. Lewisii*. Oblongo-ovalis, niger, antennis palpisque piceo-rufis, illis articulo 1mo nigricante; thorace capite paulo latiore, latitudine plus sesqui brevior postice paulo angustato, lateribus rotundatis, parum depressis, basi fere lævibus, angulis posticis subrectis, apice haud rotundatis, elytris subtiliter reticulatis, feminae opacis, striatis, intertitiis planis, 3io puncto postico impresso, abdomine pone et inter coxas parce punctulato. Long. .52—.58.

Marquette, Lake Superior. Collected and given to me by Dr. S. Lewis, to whom I take pleasure in dedicating this fine species. Also found in Canada.

The under surface of the abdomen and the legs in the specimens examined is piceous, but in more mature individuals will perhaps be found black. The apex of the suture of the female in *H. montanus*, *Lewisii*, *rufimanus*, *laticeps*, *viduus* and *fraternus* is armed with a small but distinct spine, of which no trace is seen in *H. carbonatus*. Of *H. innocuus*, I have but one specimen, a male.

31. *H. viduus*. Ovalis, niger, antennis palpisque ferrugineis, thorace capite parum latiore, antrorsum subangustato, lateribus haud depressis, angulis posticis apice rotundatis, basi lævi, foveis parvis; elytris reticulatis, feminae sericeo-opacis, intertitiis planis, 3io puncto postico impresso; abdomine inter et pone coxas parce punctato. Long. .56.

One female; Rock Island, Illinois; B. D. Walsh, Esq. Differs from *H. laticeps* by the hind angles of the thorax being rounded at the apex, and by the head being not quite so broad.

32. *H. fraternus*. This species is very closely allied to *H. funestus* and *oblitus*, but with specimens of each before me I am able to note the following differences:

H. fraternus, thorax near the basal foveæ feebly and sparsely punctulate, scarcely perceptibly narrowed behind; elytra more than $2\frac{1}{2}$ times longer than the thorax, nearly equally shining in both sexes; sutural spine of female distinct. (5 specimens, Oregon.)

H. oblitus, thorax distinctly narrowed behind, basal foveæ scarcely punctulate; elytra less than $2\frac{1}{2}$ times longer than the thorax; elytra more opaque in the female than in the male; sutural spine of female distinct. Body broader and more oblong than in *H. fraternus*. (5 specimens, Kansas and New Mexico.)

H. funestus, of the same form as *H. fraternus*, but smaller, with the sides of the thorax more distinctly depressed, and the suture of the female not armed with a spine at the tip. (5 specimens, Kansas and Nebraska.)

35. *H. furtivus*. Oblongo-ovalis, nigro-piecus, nitidus, subtus piceus, antennis palpis pedibusque piceo-ferrugineis; thorace latitudine fere duplo brevior, lateribus rotundatis, haud deplanatis, angulis posticis obtusis subrotundatis, basi rugoso, haud punctato, foveis parvis, linearibus; elytris (maris) thorace haud latioribus, vix reticulatis, intertitiis planis, puncto postico dorsali impressis; abdomen setis accessoribus distinctis, ad basin pone coxas punctulatum, inter coxas læve; mentum dente minuto armatum. Long. .40.

Colorado Territory. One male kindly given me by Dr. S. Lewis. Seems most nearly related to *H. stupidus* in characters, although differing in 1865.]

form. The appearance is very similar to *H. fallax* Lec., but the accessory setæ of the abdomen enable it to be at once distinguished.

38. *H. lucidus*. Longior ovalis, piceus, nitidus, corpore subtus, antennis pedibusque pallidioribus; thorace latitudine fere duplo brevior, lateribus deplanatis antice rotundatis, angulis posticis rectis rotundatis, basi usque ad latera punctato, foveis basalibus vagis; elytris pernitidis (maris) haud reticulatis, puncto dorsali distincto; abdomen setis accessoribus distinctis, basi pone et inter coxas parce punctatum; mentum dente magno armatum. Long. .30.

One specimen. Nebraska, near the Rocky Mountains. Of the same form as *H. desertus*, but with the base of the thorax punctured and the sides distinctly depressed.

39. *H. obesus*. In the list of North American Coleoptera, published by the Smithsonian Institution, I referred this species to *Bradycellus*. The examination of male specimens proves that the middle tarsi are widely dilated in that sex. In one specimen from Lake Winnipeg, the palpi have the last joint singularly impressed and concave towards the tip, which thus appears pointed when viewed in a certain direction. It is easily distinguished from the other species having accessory ventral setæ and by the elytra being quite distinctly sinuate obliquely at the tip.

On a new genus of SERRANINÆ.

BY THEODORE GILL.

Genus TRISOTROPIS Gill.

Body compressed, very oblong and subfusiform, with the caudal peduncle oblong and moderately contracted behind.

Scales small, regularly imbricated.

Lateral line parallel with the dorsal outline.

Head moderate, oblong-rhomboid, with the profile gradually decurved to the snout, and the lower jaw nearly rectilinear. *Eyes* oval, moderate, situated entirely in the anterior half of the head, and close to the profile. *Nostrils*; anterior small, simple; posterior large, divided inside by a horizontal ridge into an upper and lower chamber. *Preorbital* bone narrower than eye. *Preoperculum* far behind eyes, minutely serrated behind; *operculum* with three spines; the middle continued from an oblique rib on the inner surface of the bone. *Scales* extending over the whole head, except the preorbital region, and also on the jaws.

Mouth rather large, with the cleft moderately oblique; supramaxillaries continued backwards beyond eye.

Teeth of the upper jaw in the outer row moderate, little curved inwards, with one or two canine teeth on each side in front; within, moveable and recumbent, on the sides pauciserial, small inwards; in front enlarged and somewhat barbed at the points. In the lower jaw biserial on the sides; those of the outer row fixed, moderate and erect; those of the inner larger, moveable, and somewhat barbed; in front, on each side, a canine.

Dorsal fin with its spinous portion depressed behind, generally slightly convex, considerably larger than the soft, and with eleven (exceptionally 10—12) rather slender spines; soft portion oblong, with about sixteen to eighteen rays.

Anal fin under the middle of the soft dorsal, higher in front than behind, with the margin convex, and with three graduated spines and about eleven (10—12) rays.

Caudal oblong, slightly emarginated behind.

Pectoral fins moderate, convex behind.

[June,